

# Specifications — VTG 400D

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## Video signal characteristics

|                                               |                   |
|-----------------------------------------------|-------------------|
| Dot clock.....                                | 200 MHz (max.)    |
| Pixel clock accuracy .....                    | 100 ppm           |
| Horizontal frequency range (factory defaults) | 15 kHz to 131 kHz |
| Vertical frequency range (factory defaults)   | 30 Hz to 120 Hz   |
| Rise/fall time                                |                   |
| NTSC, PAL .....                               | 140 ns            |
| All other signal rates.....                   | <4 ns             |

## Video output

|                             |                                                                                                                                                                                                                              |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number/signal type.....     | 1 RGBHV, RGBS, RGsB, RsGsBs, component video, HDSDI (SMPTE 292M), SDI digital component video (SMPTE 259M-C), S-video, composite video (NTSC/PAL)                                                                            |
| Connectors .....            | 1 x 5 female BNC (RGB)<br>1 female 15-pin HD (RGB)<br>1 x 3 female BNC (component video)<br>1 female 4-pin mini DIN (S-video)<br>1 female BNC (composite video)<br>1 female BNC (SDI/HDSDI)                                  |
| Nominal level .....         | 1 Vp-p for Y of component video and S-video, and for composite video, RsGsBs<br>0.7 Vp-p for RGB and for R-Y and B-Y of component video<br>0.286 Vp-p (burst) for C of NTSC S-video, 0.300 Vp-p (burst) for C of PAL S-video |
| Minimum/maximum levels..... | 0.0 V to 1.0 Vp-p                                                                                                                                                                                                            |
| Impedance .....             | 75 ohms                                                                                                                                                                                                                      |
| Resolutions.....            | Computer (VGA–QXGA), video (NTSC, PAL), HDTV, 16:9 high resolutions, and custom resolutions (user-defined)                                                                                                                   |
| Return loss.....            | -30 dB @ 5 MHz                                                                                                                                                                                                               |
| DC offset.....              | 0 ±5 mV for RGB and component video,<br>0 ±5 mV for NTSC S-video and composite video<br>14 mV ±5 mV for PAL S-video and composite video                                                                                      |

## Sync

|                                |                                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output type.....               | RGBHV, RGBS, RGsB, RsGsBs (for RGB signals)<br>Tri-level on Y, R-Y, B-Y channels (component video 720p, 1080i, 1080p)<br>Bi-level on Y channel (for all other component video rates) |
| Standards.....                 | NTSC, PAL, SMPTE 170M, SMPTE 274M, SMPTE 293M, SMPTE 295M, SMPTE 296M                                                                                                                |
| Output level .....             | 0.3 Vp-p for RGsB, RsGsBs, component video (bi-level sync)<br>0.6 Vp-p for RsGsBs, component video (tri-level sync)<br>TTL: 5.0 Vp-p, unterminated for RGBHV, RGBS                   |
| Output impedance .....         | 75 ohms                                                                                                                                                                              |
| Max. rise/fall time .....      | 5 ns (TTL sync)                                                                                                                                                                      |
| Polarity.....                  | Positive or negative (scan rate/signal dependent)                                                                                                                                    |
| Scope trigger connectors ..... | 1 BNC female (scope trigger)                                                                                                                                                         |

## Audio

|                  |                                                                                        |
|------------------|----------------------------------------------------------------------------------------|
| THD + Noise..... | <0.008% typical @ +6 dBu (1.55 V), 1 kHz<br>0.18% @ -38 dBu (9.75 mV), 20 Hz to 20 kHz |
| Flatness .....   | ±0.05 dB @ 20 Hz to 20 kHz                                                             |
| Accuracy .....   | ±0.4 dB                                                                                |

**NOTE** 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

## Specifications — VTG 400D, cont'd

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### Audio output

|                                   |                                                                                                                                                                                                                                                               |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number/signal type.....           | 1 mono, balanced; 2 mono, unbalanced                                                                                                                                                                                                                          |
| Connectors .....                  | (1) 3.5 mm mini stereo jack (unbalanced mono left and right, tip-ring-sleeve)<br>1 female RCA jack (unbalanced, tip-ring)<br>1 male 3-pin XLR (balanced) (pin 1 = GND, pin 2 = +, pin 3 = -)<br><b>NOTE</b> <i>The XLR output is immune to phantom power.</i> |
| Impedance.....                    | 50 ohms unbalanced, 100 ohms balanced                                                                                                                                                                                                                         |
| Waveforms .....                   | Pink noise, white noise, sine wave (fixed/swept burst), square wave, polarity test                                                                                                                                                                            |
| Level ranges .....                | Pink noise: -72 dBu to -4 dBu (-74 dBV to -6 dBV) (0.20 mV to 500 mVrms)<br>Polarity test: -72 dBu to -14 dBu (-74 dBV to -16 dBV) (0.20 mV to 158 mVrms)<br>All other signal types: -72 dBu to +6 dBu (-74 dBV to +4 dBV) (0.20 mVrms to 1.58 Vrms)          |
| Maximum level (Hi-Z) .....        | >+6 dBu, balanced or unbalanced at 1% THD+N                                                                                                                                                                                                                   |
| Maximum level (600 ohm) .....     | >+4.66 dBu, balanced or unbalanced at 1% THD+N                                                                                                                                                                                                                |
| Crest factor (pink noise) .....   | 3.25 (10.24 dB)                                                                                                                                                                                                                                               |
| Crest factor (white noise) .....  | 1.98 (5.95 dB)                                                                                                                                                                                                                                                |
| Rise time (square wave) .....     | 1.5 ms at 20 Hz to 7 $\mu$ s at 5 kHz                                                                                                                                                                                                                         |
| Rise time (polarity test) .....   | 5 $\mu$ s                                                                                                                                                                                                                                                     |
| Frequency accuracy (sine wave) .. | 50 ppm                                                                                                                                                                                                                                                        |

### Control/remote— test generator

|                                    |                                                                                               |
|------------------------------------|-----------------------------------------------------------------------------------------------|
| Serial control port.....           | RS-232, 9-pin female D connector                                                              |
| Baud rate and protocol.....        | 9600 baud, 8 data bits, 1 stop bit, no parity                                                 |
| Serial control pin configurations. | 2 = TX, 3 = RX, 5 = GND                                                                       |
| Program control.....               | Extron's control/configuration program for Windows®<br>Extron's Simple Instruction Set (SIS™) |

### General

|                            |                                                                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Power .....                | 100 VAC to 240 VAC, 50/60 Hz, 15 watts, internal                                                                                           |
| Temperature/humidity ..... | Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing<br>Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing |
| Cooling .....              | Convection, no vents                                                                                                                       |
| Mounting.....              | No                                                                                                                                         |
| Enclosure type .....       | Metal                                                                                                                                      |
| Enclosure dimensions.....  | 6.75" H x 9.0" W x 1.75" D<br>(17.1 cm H x 22.9 cm W x 4.4 cm D)<br>(7.5" [19.1 cm] H including connectors.)                               |
| Product weight .....       | 3.3 lbs (1.5 kg)                                                                                                                           |
| Shipping weight .....      | 7 lbs (4 kg)                                                                                                                               |
| Vibration.....             | ISTA 1A in carton (International Safe Transit Association)                                                                                 |
| Regulatory compliance      |                                                                                                                                            |
| Safety.....                | CE, CUL, UL                                                                                                                                |
| EMI/EMC .....              | CE, C-tick, FCC Class A, ICES, VCCI                                                                                                        |
| MTBF.....                  | 30,000 hours                                                                                                                               |
| Warranty .....             | 3 years parts and labor                                                                                                                    |

**NOTE** *All nominal levels are at  $\pm 5\%$ .*

**NOTE** *Specifications are subject to change without notice.*

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